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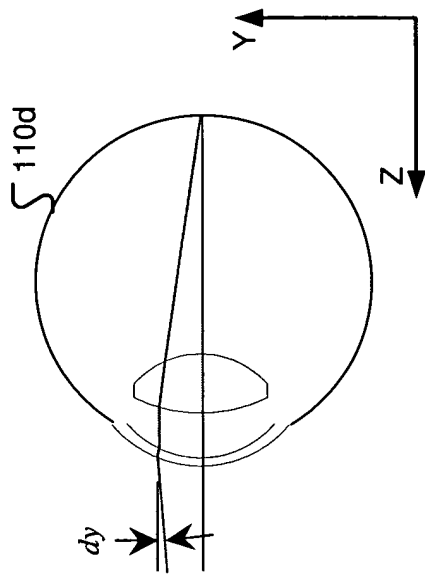
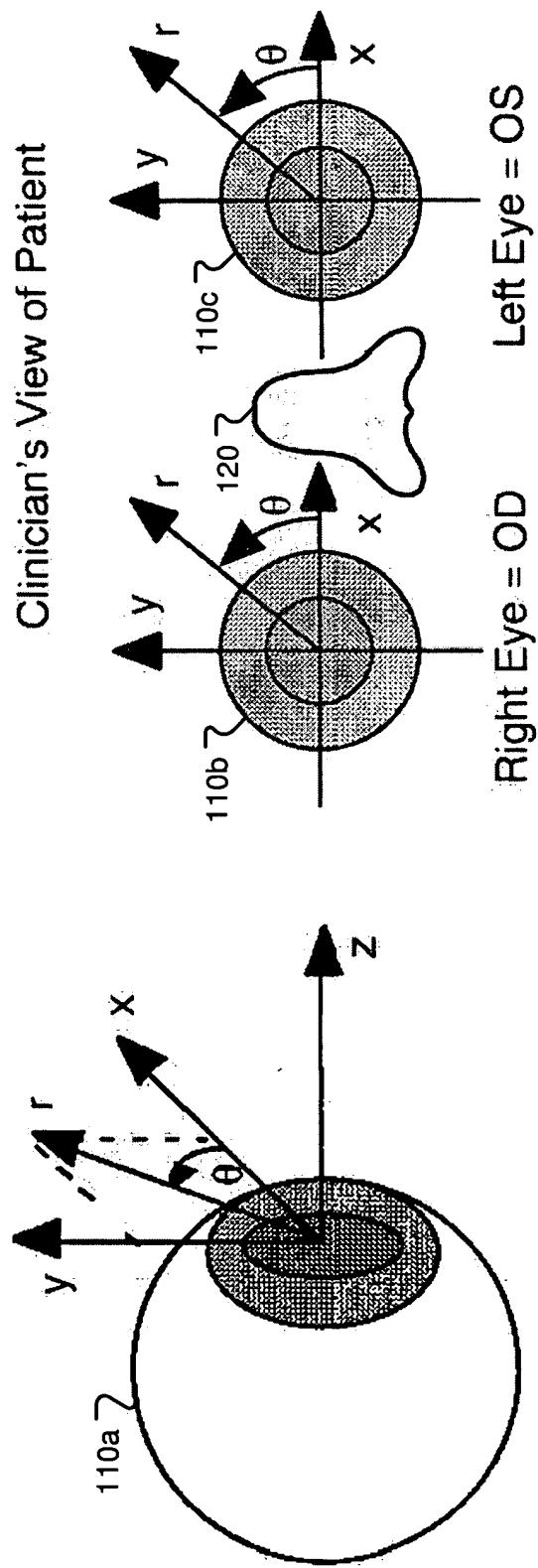


FIG. 1

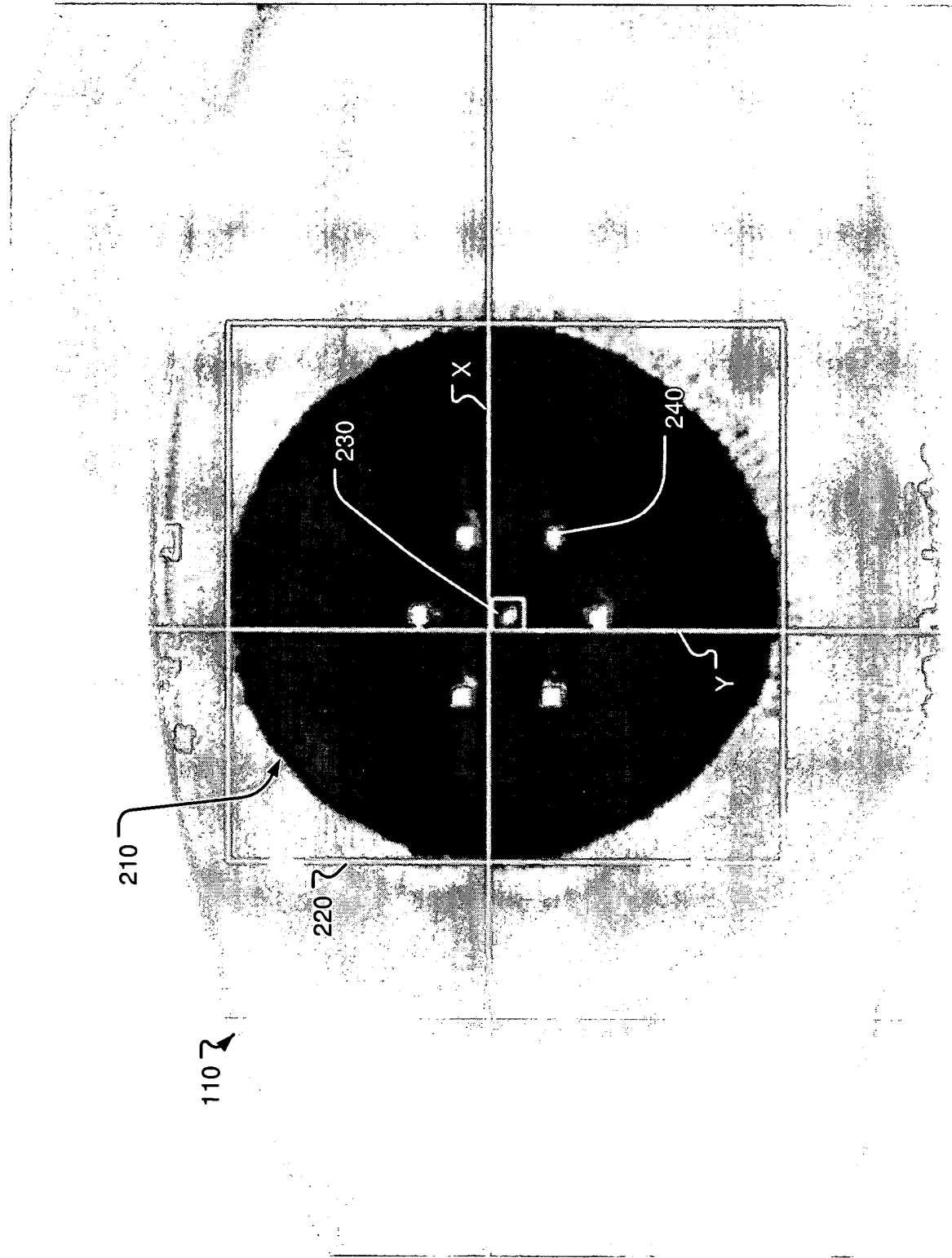


FIG. 2

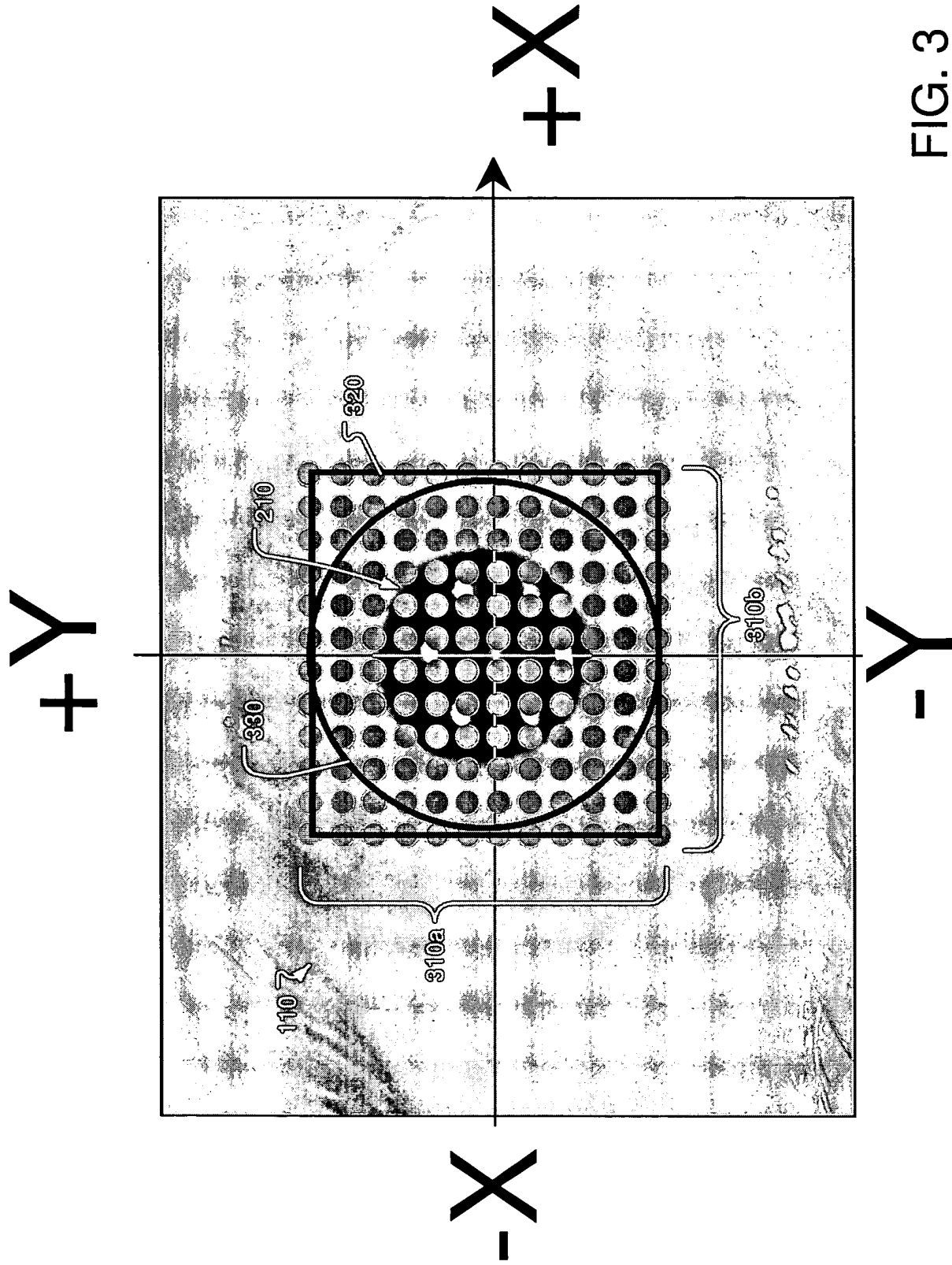


FIG. 3

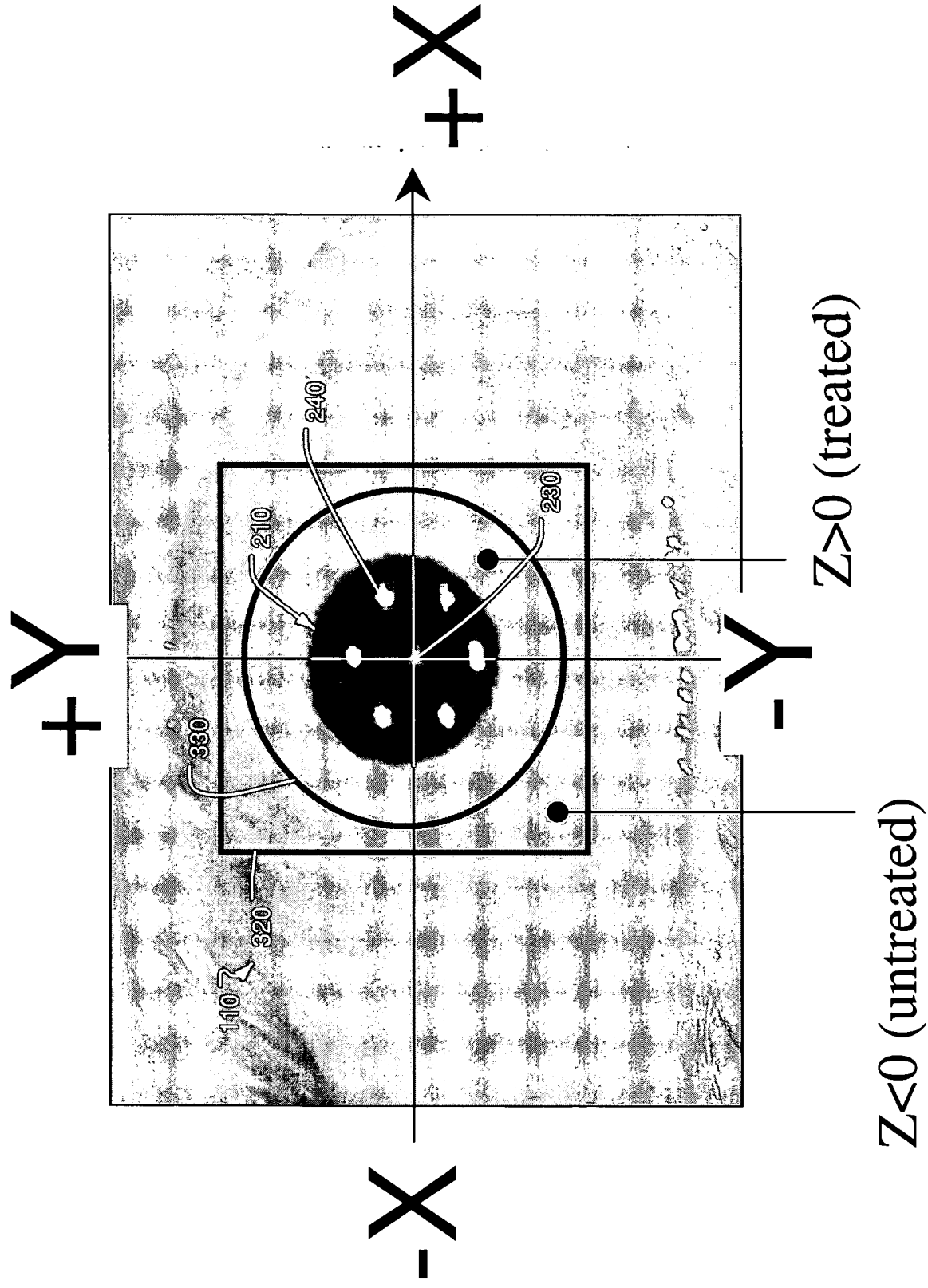


FIG. 4

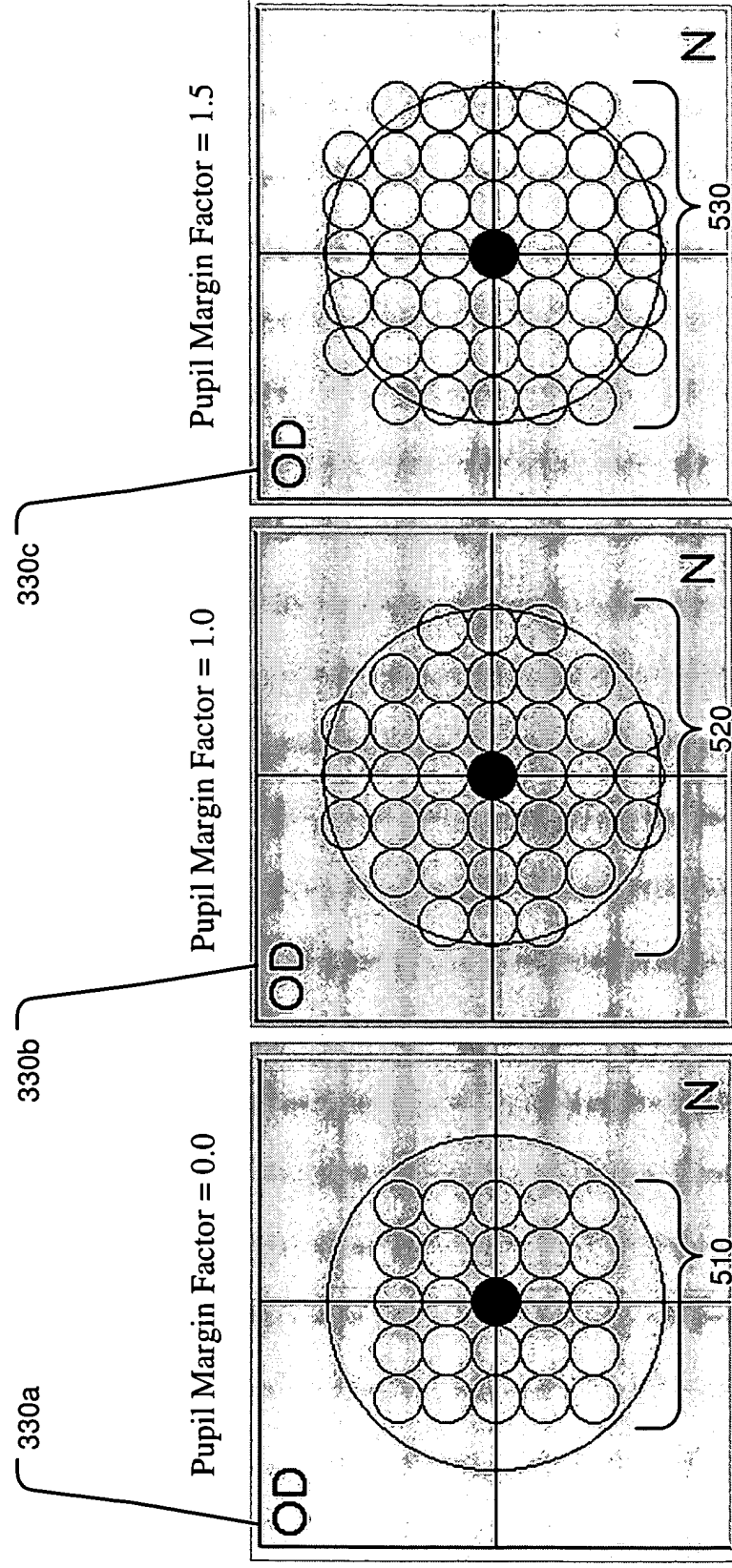


FIG. 5

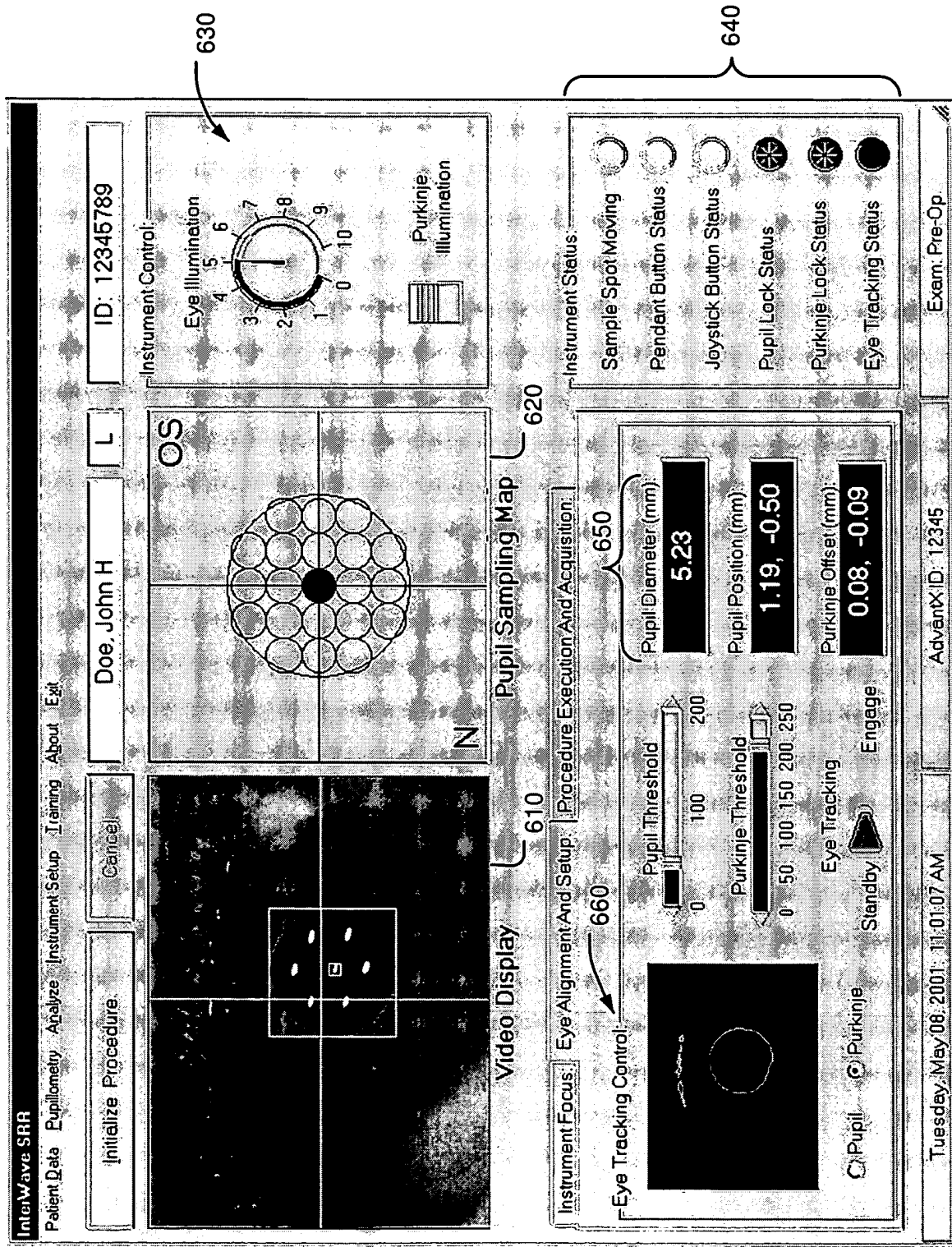


FIG. 6

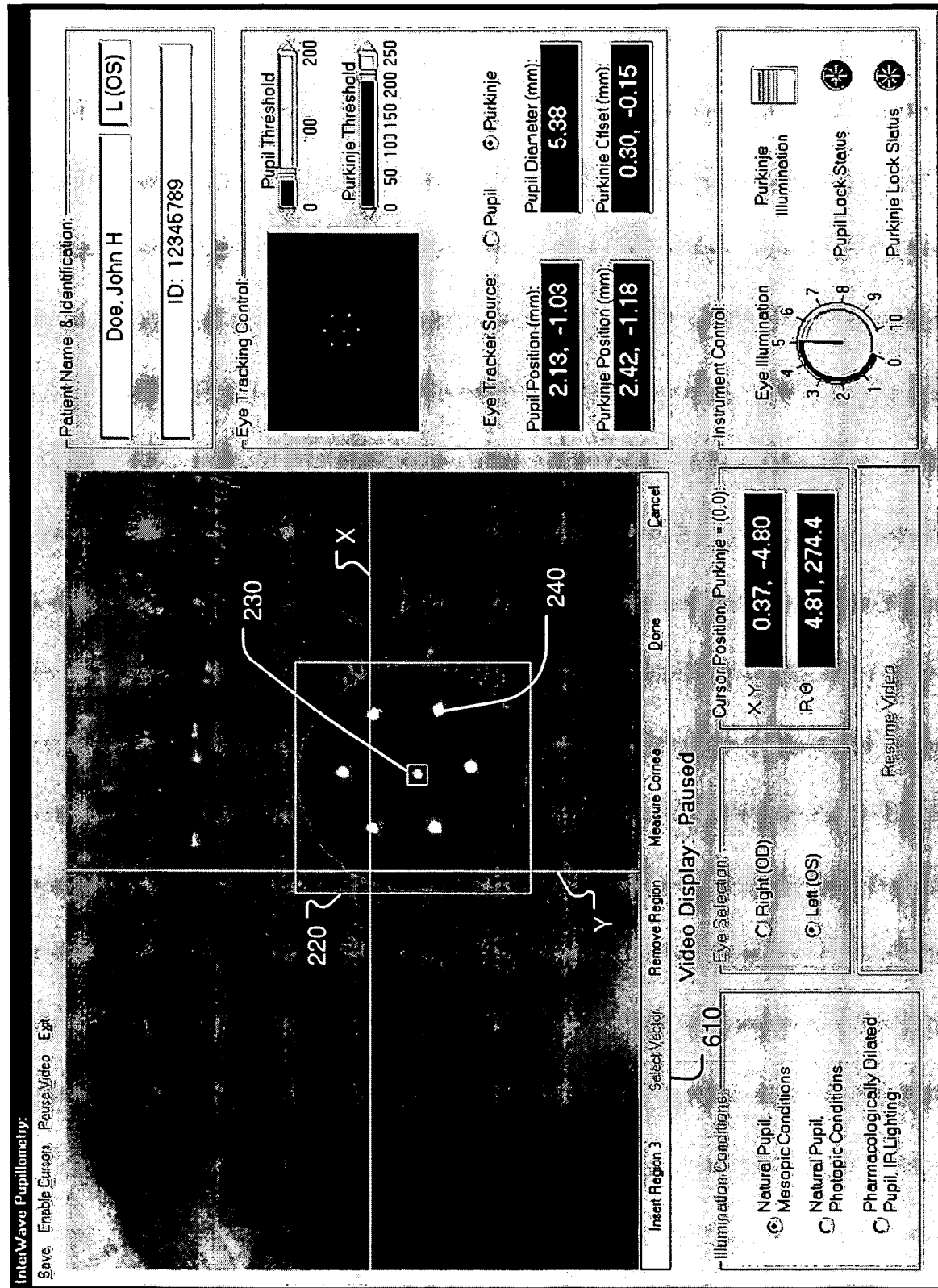


FIG. 7



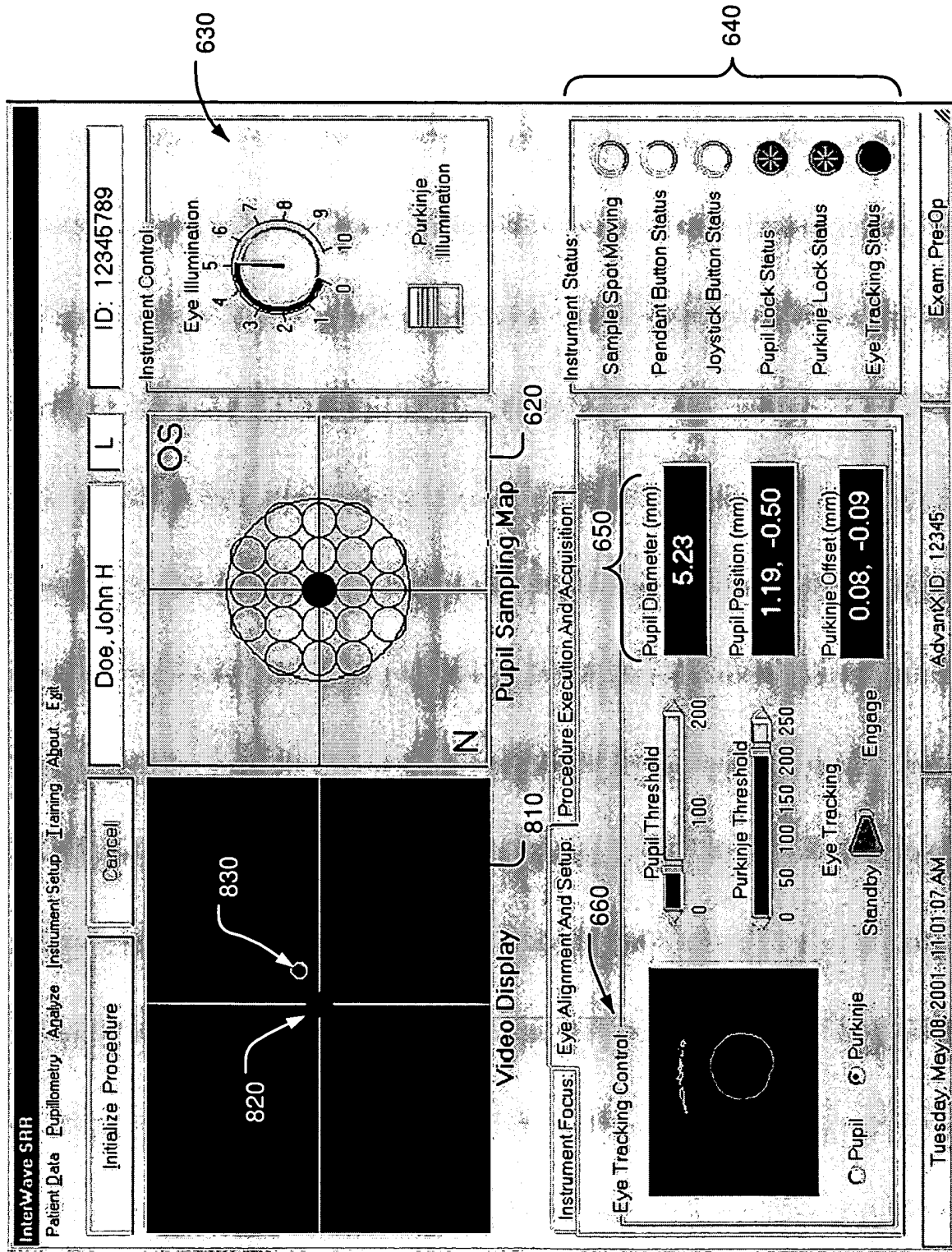


FIG. 8

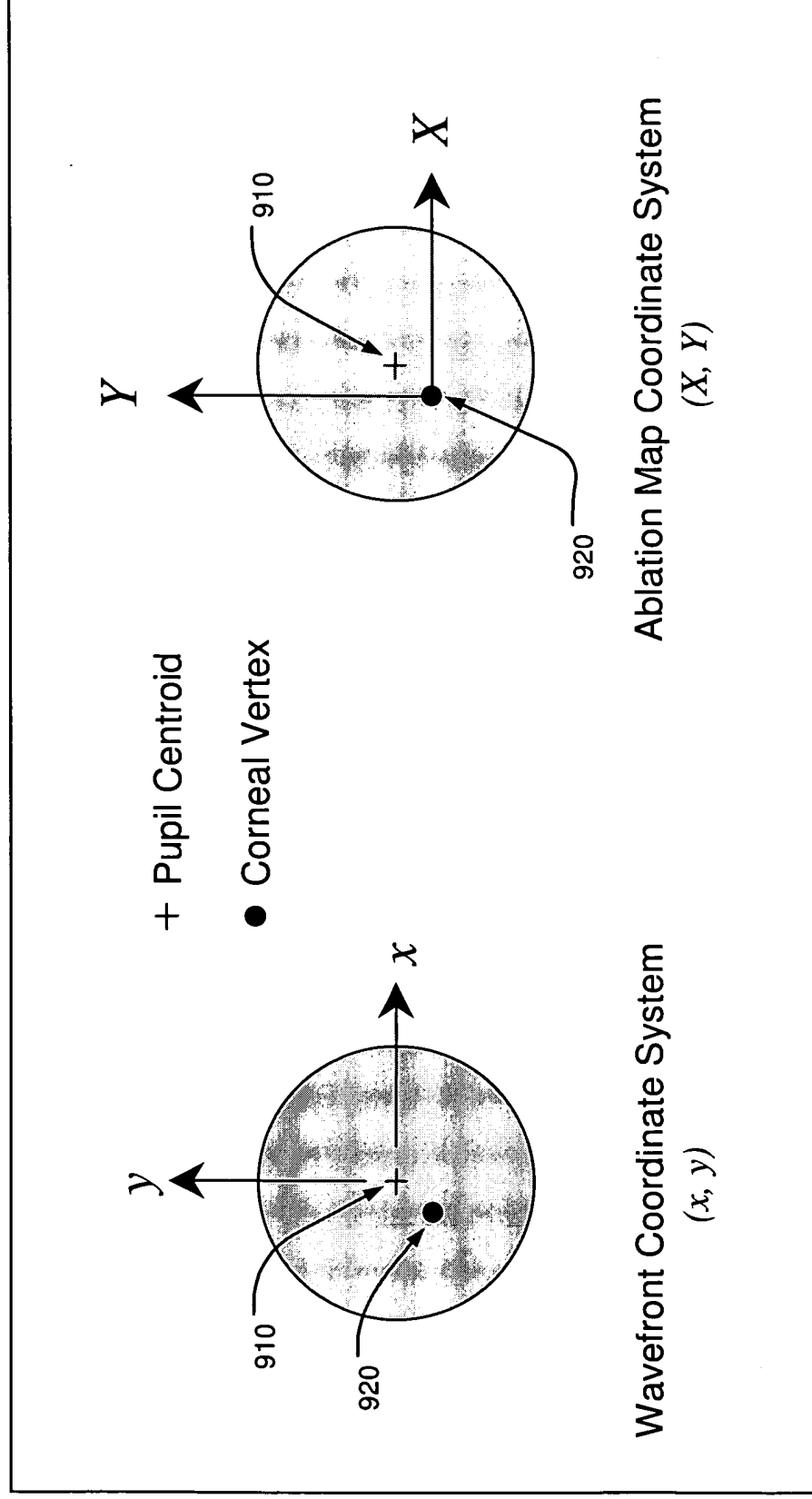


FIG. 9

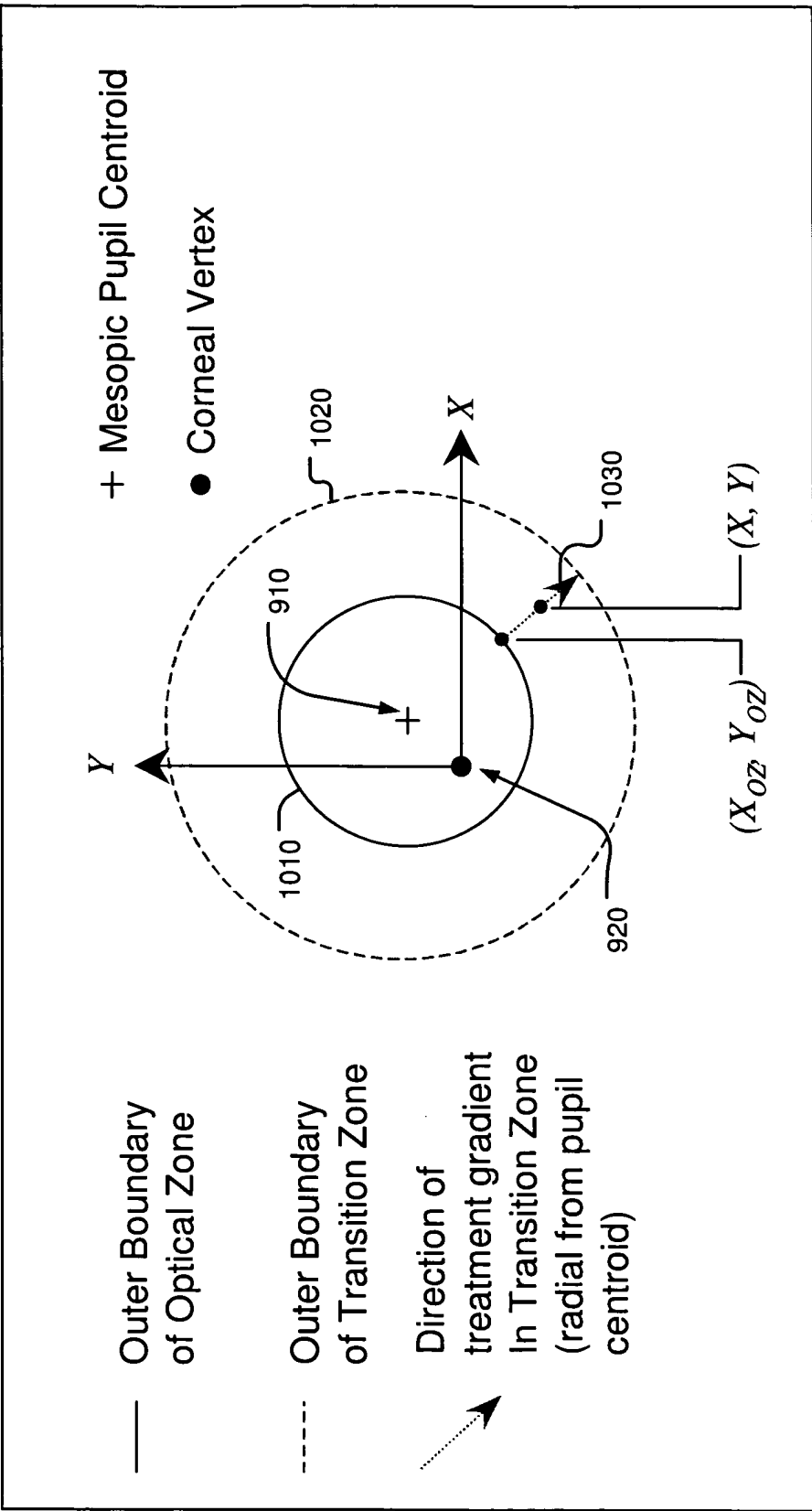


FIG. 10

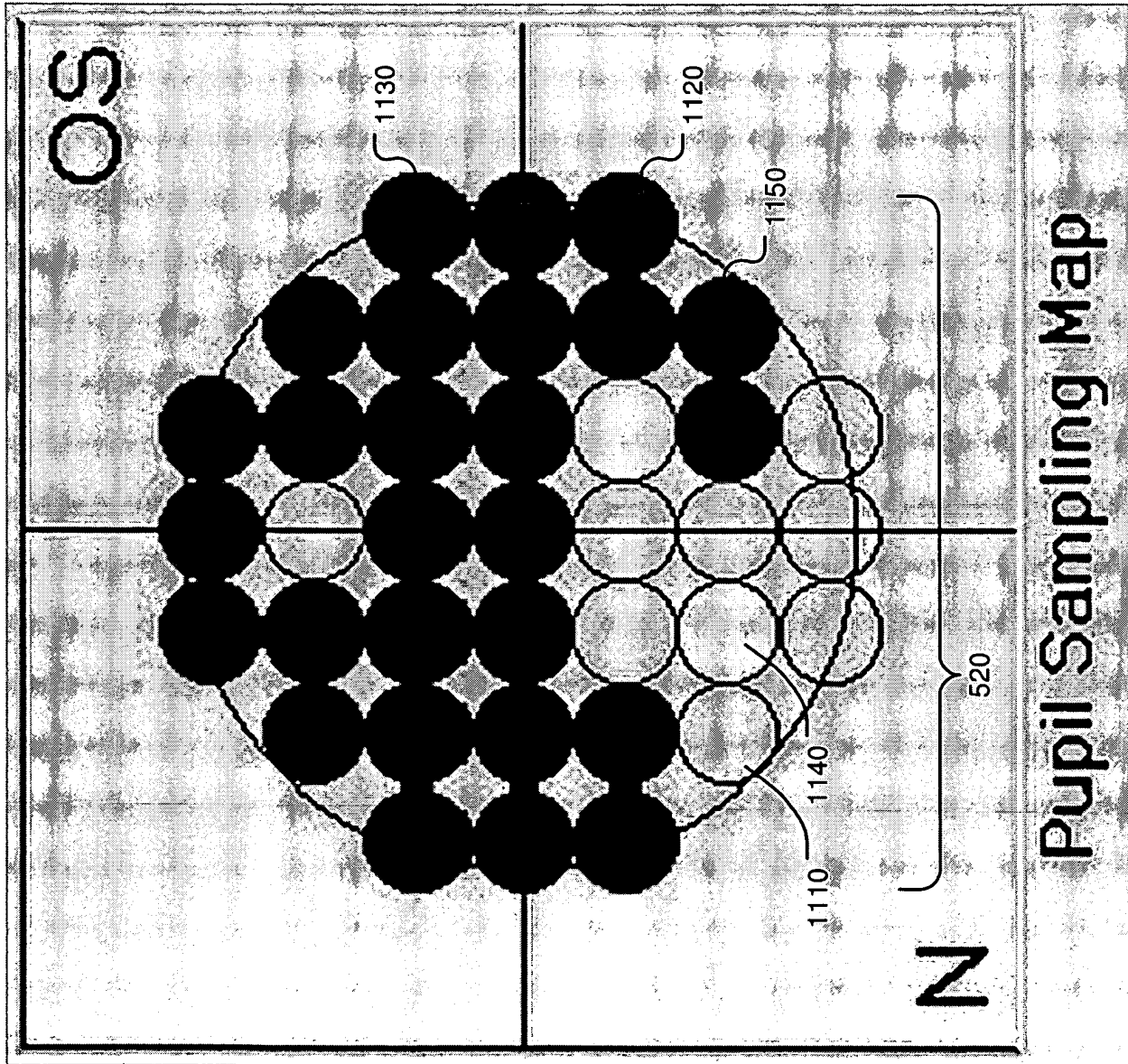


FIG. 11

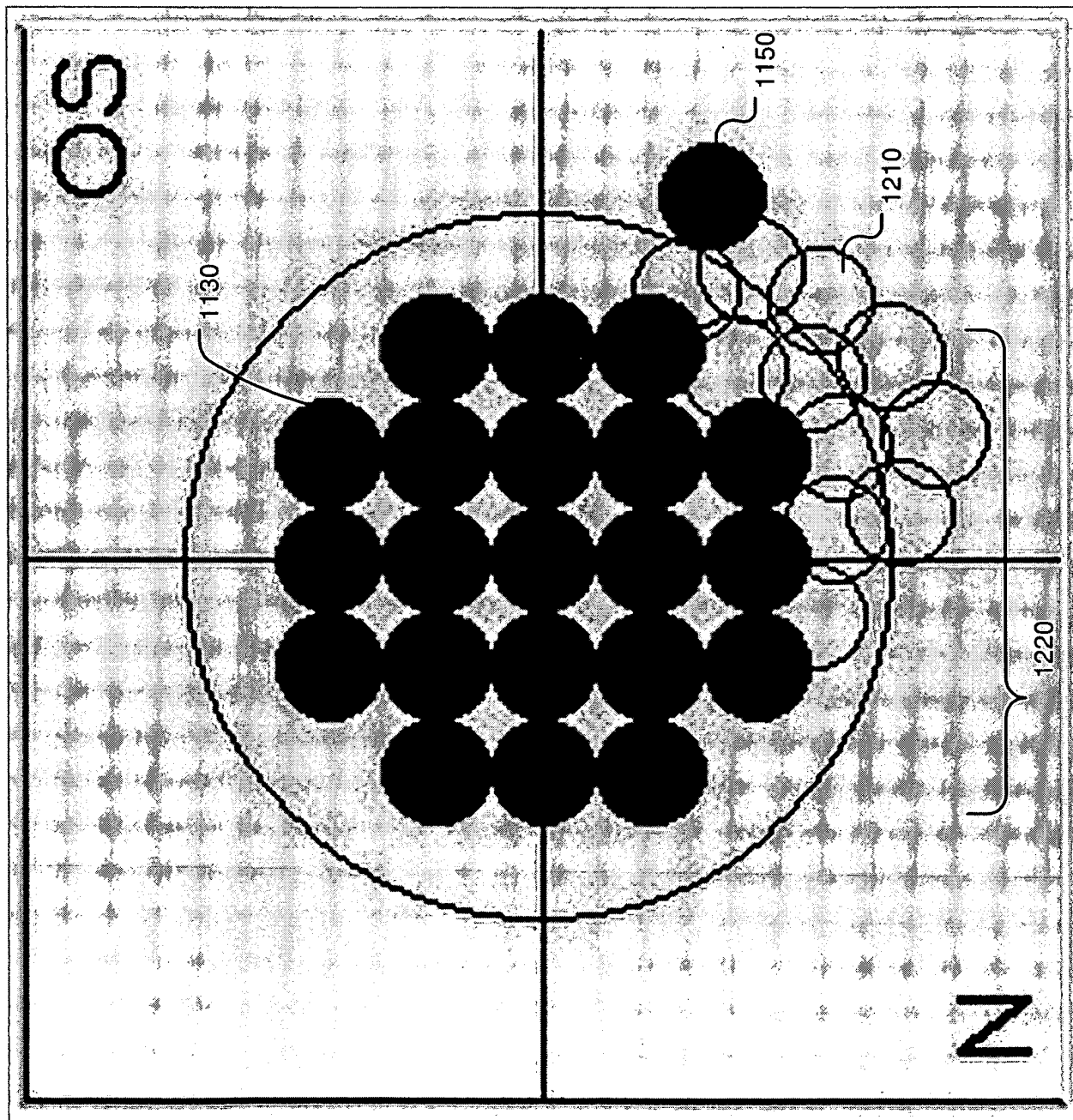


FIG. 12

<input checked="" type="checkbox"/> All Fields Are Read Only		AdvanX ID Number: <input type="text" value="12345"/>		Select Examination Type: <input type="text" value="Pre-Op"/>	
Patient Identification Number: <input type="text" value="12345789"/>		Gender (M/F): <input type="text" value="M"/>		Date of Birth: <input type="text" value="1"/> <input type="text" value="1"/> <input type="text" value="1949"/>	
Last Name: <input type="text" value="Doe"/>		First Name: <input type="text" value="John"/>		Middle Name (Or Initial): <input type="text" value="H"/>	
Manifest Refraction (Right Eye):		Manifest Refraction (Left Eye):			
Sphere: <input type="text" value="0.00"/>		Cylinder: <input type="text" value="0.00"/>		Axis: <input type="text" value="0.0"/>	
1340a		1350a		1340b	
Run Right Eye (OD) (Default)		Run Left Eye (OS)			
Find A Previous Patient:		Find Old SRR Subject			
Last Name Or Patient ID:		Retrieve New Patient From AdvanX			
Data Base Control:					
<input type="button" value="Record Number: 193"/>		<input type="button" value="Add New SRR Test Subject"/>			
<input type="button" value="Delete"/>		<input type="button" value="Done"/>			

**FIG. 13**

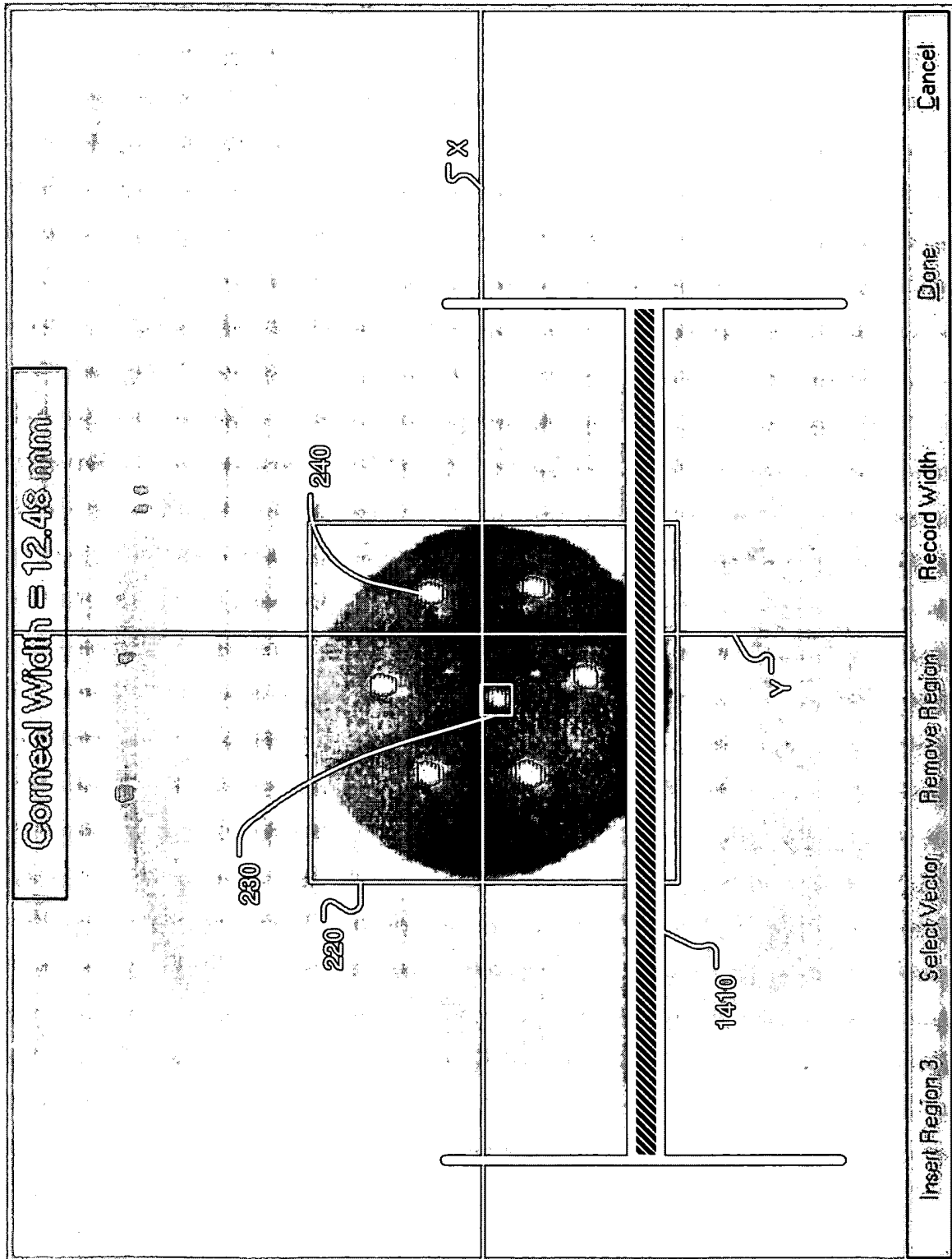


FIG. 14

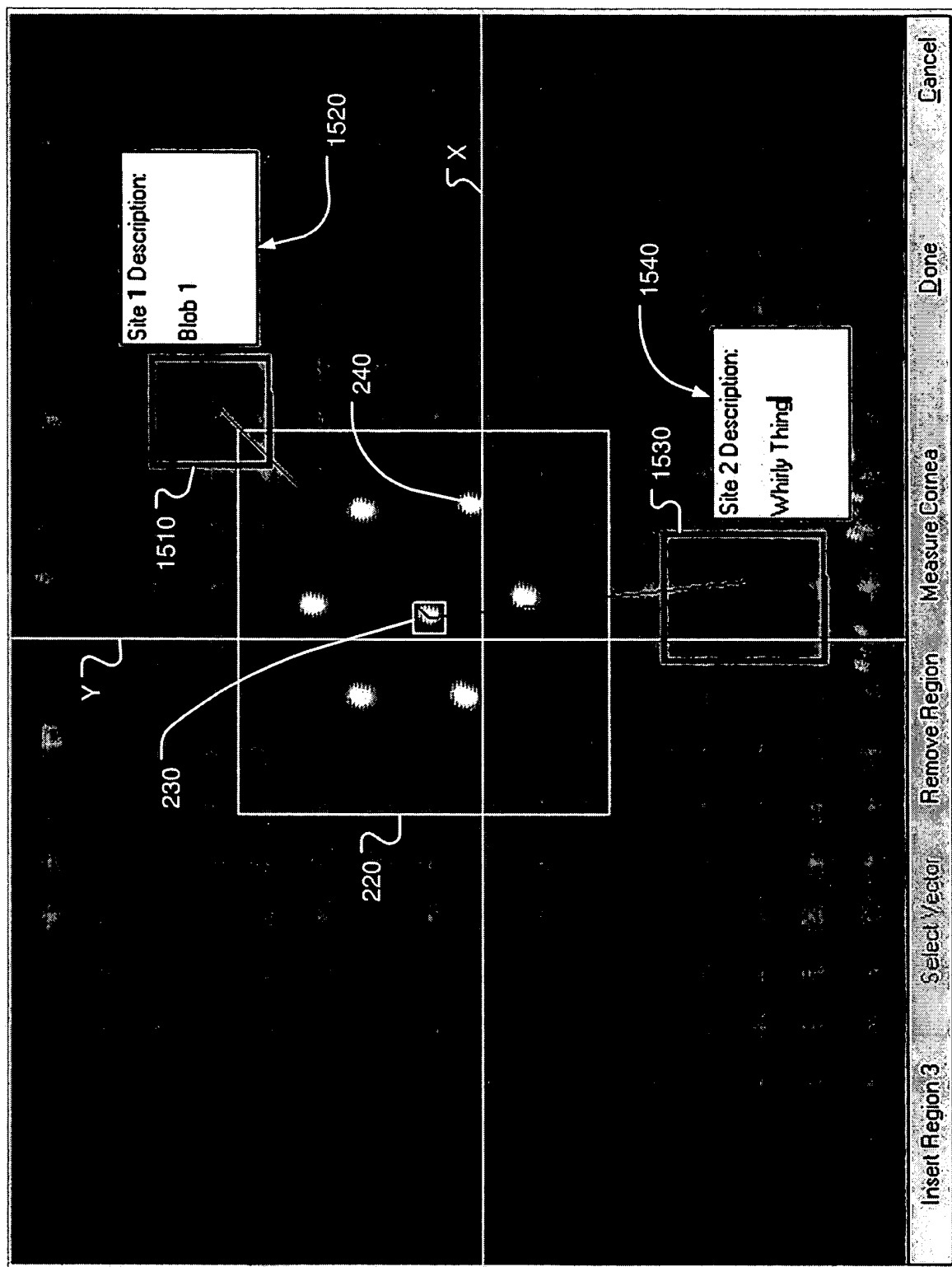


FIG. 15



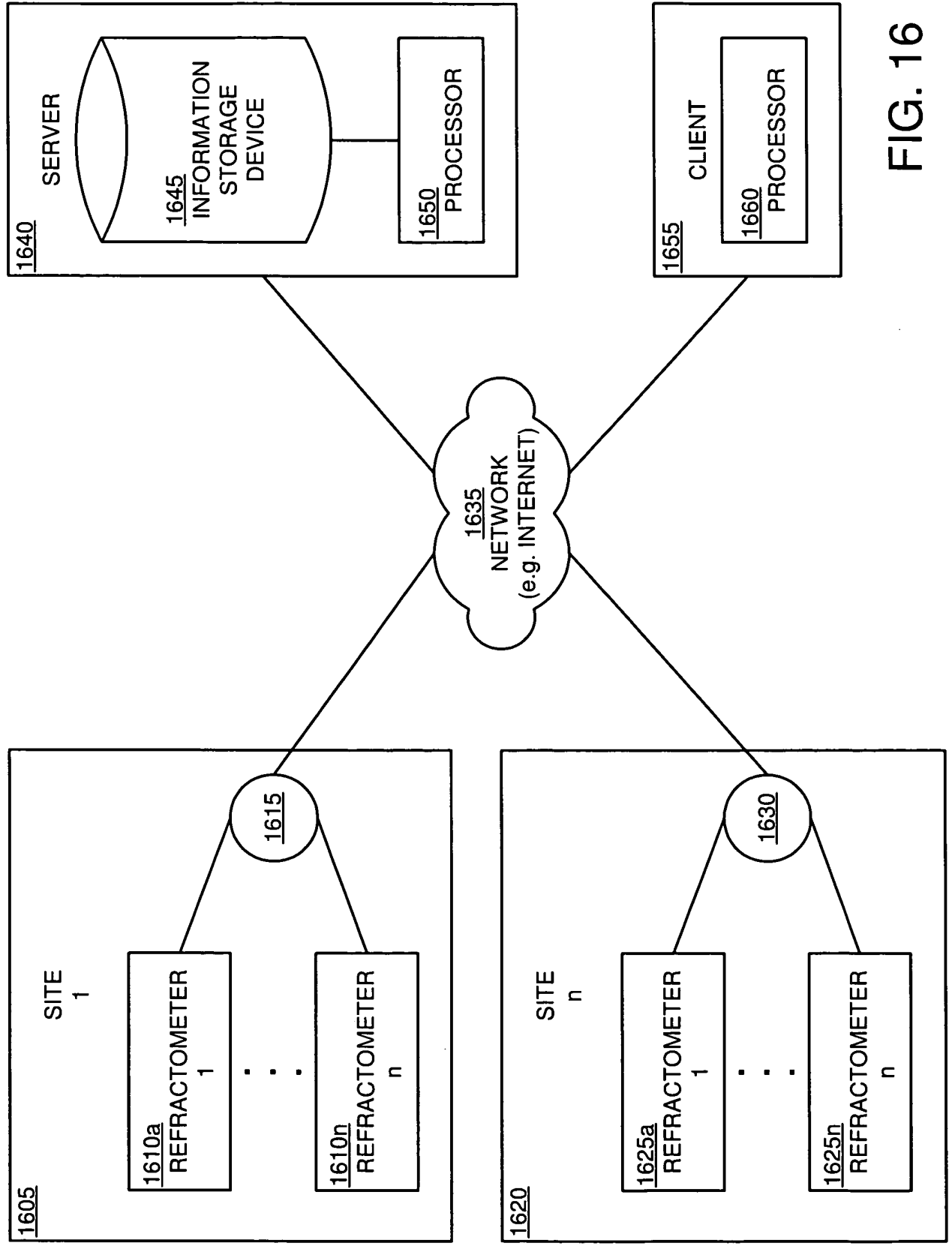


FIG. 16

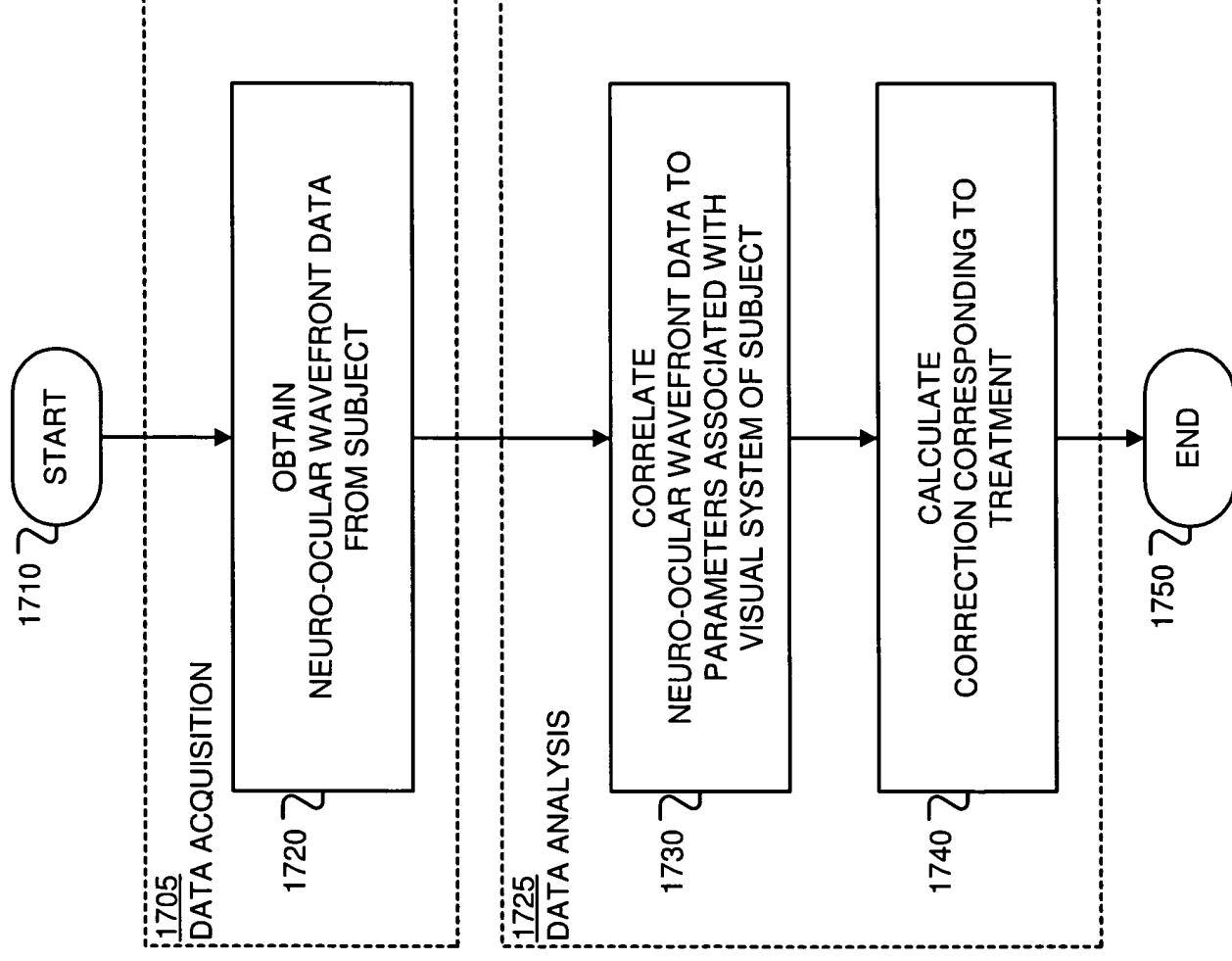


FIG. 17

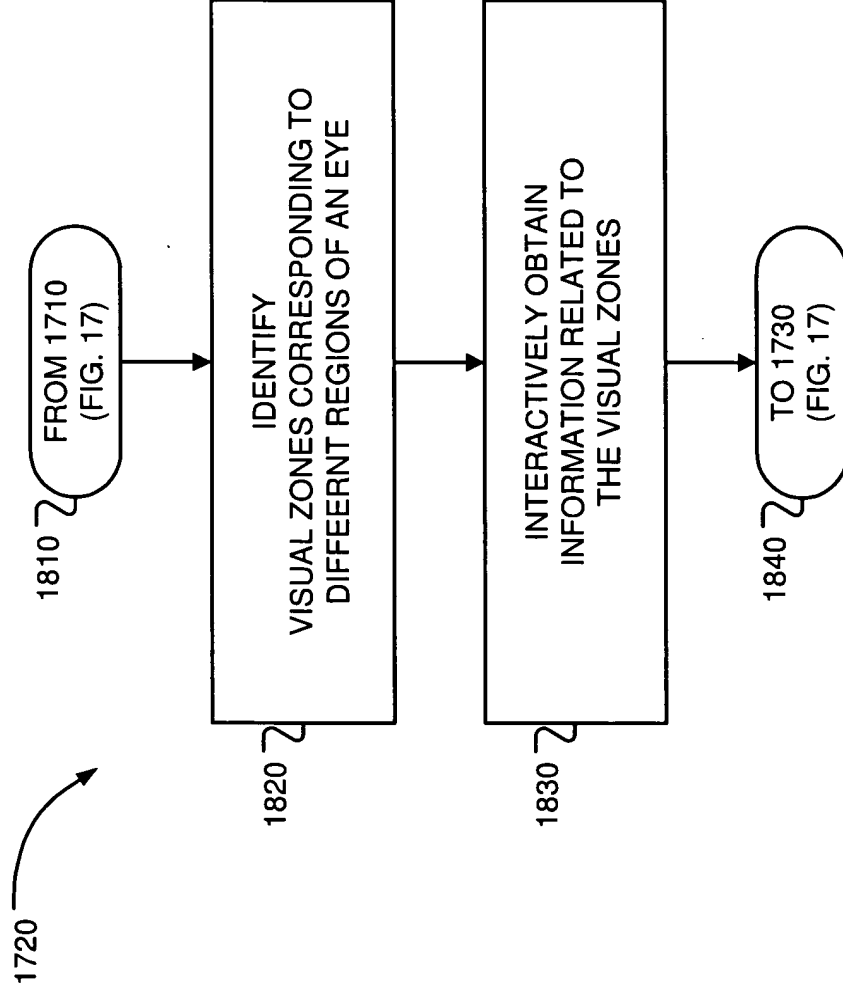


FIG. 18

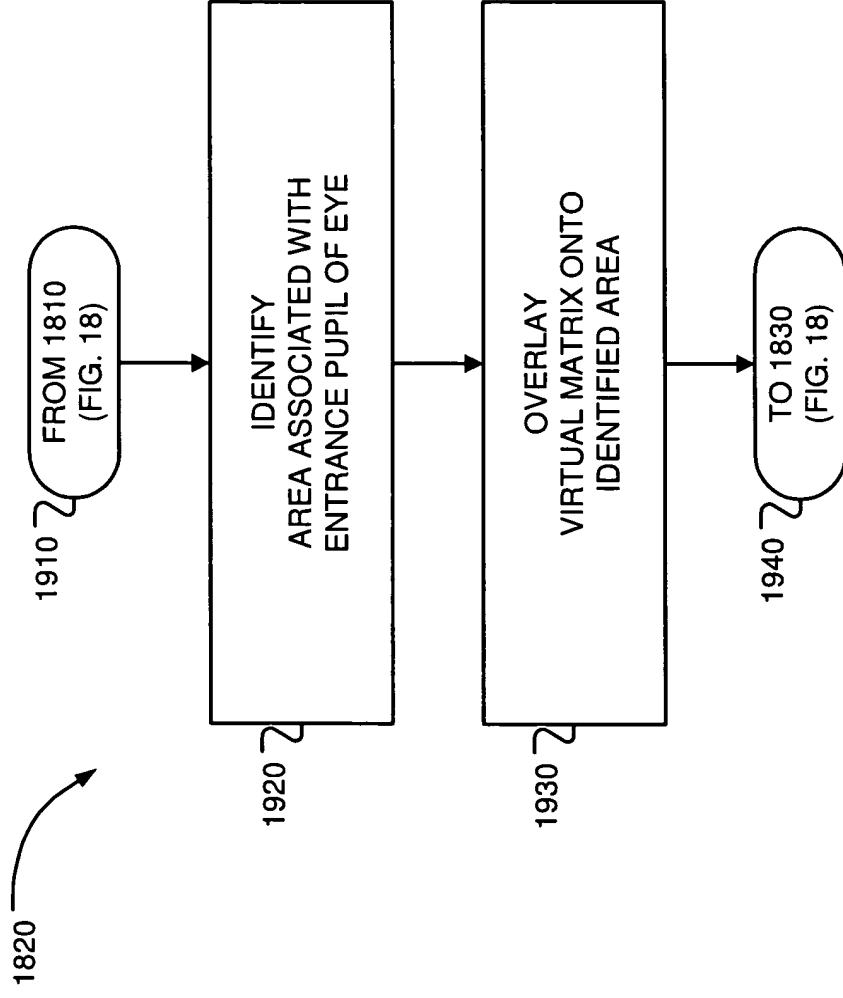


FIG. 19

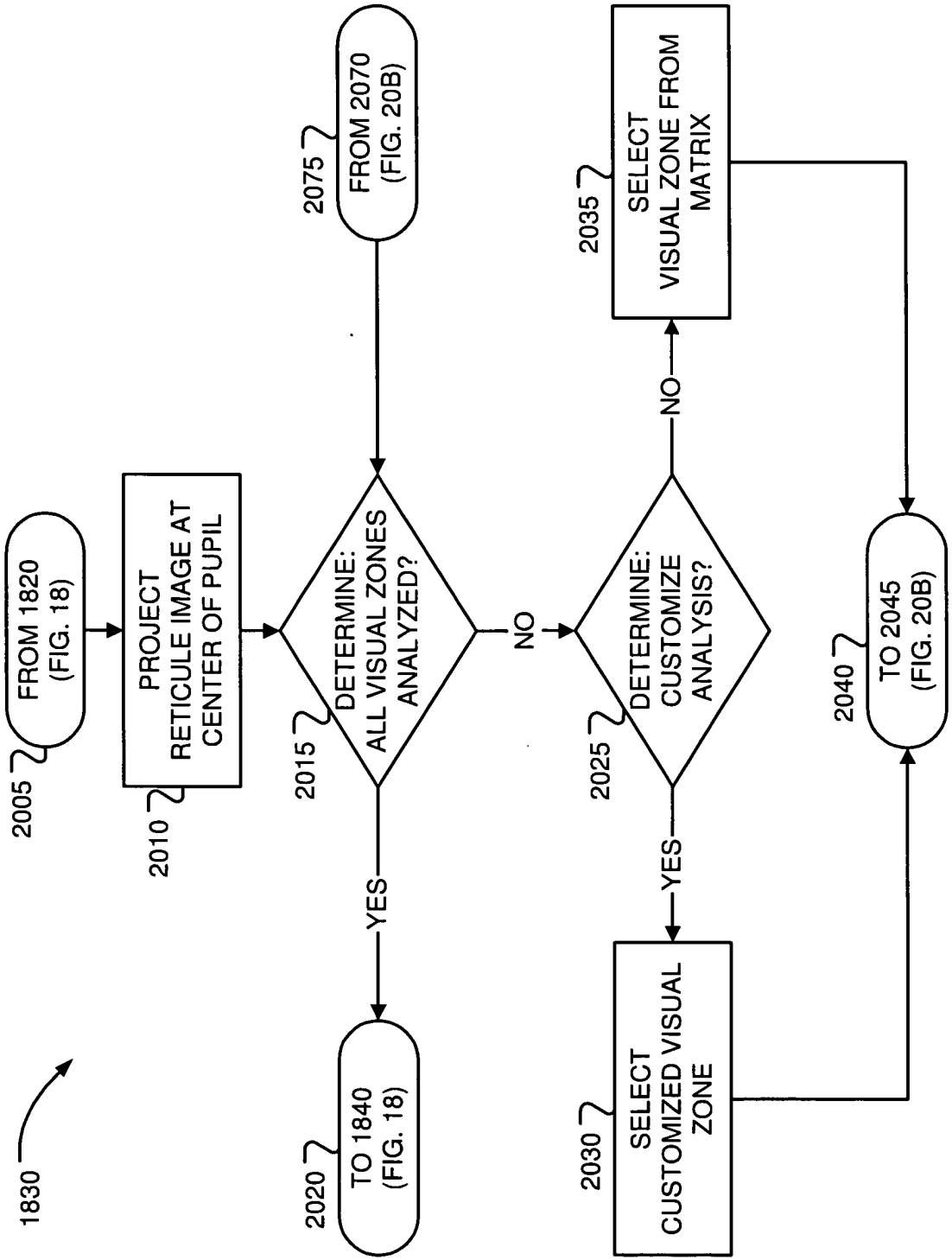


FIG. 20A

1830

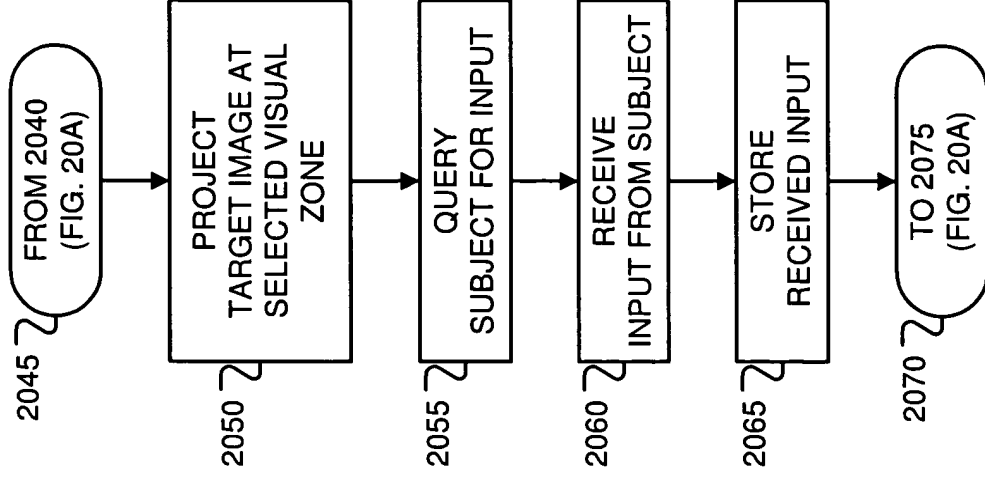


FIG. 20B

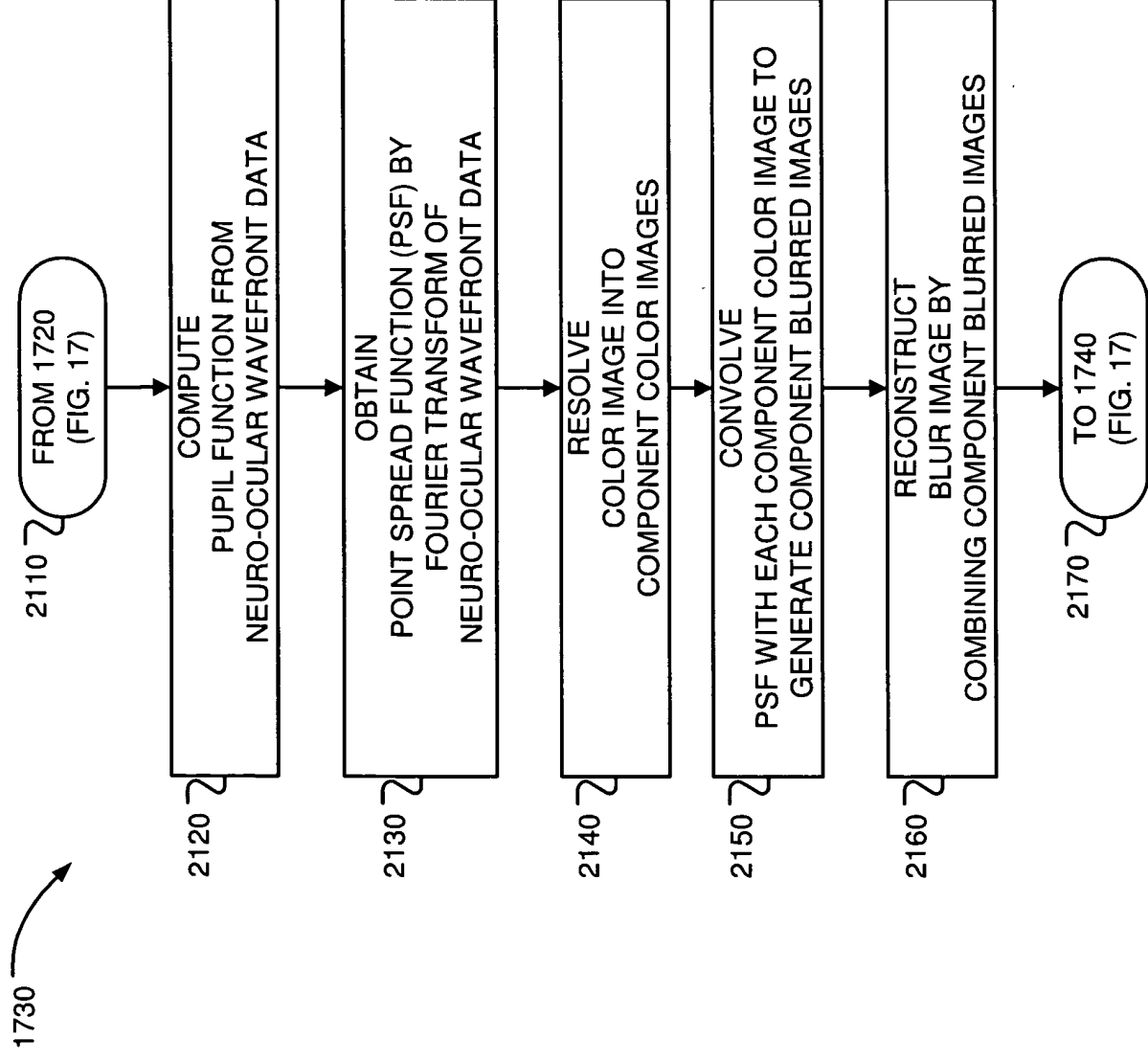


FIG. 21

1725

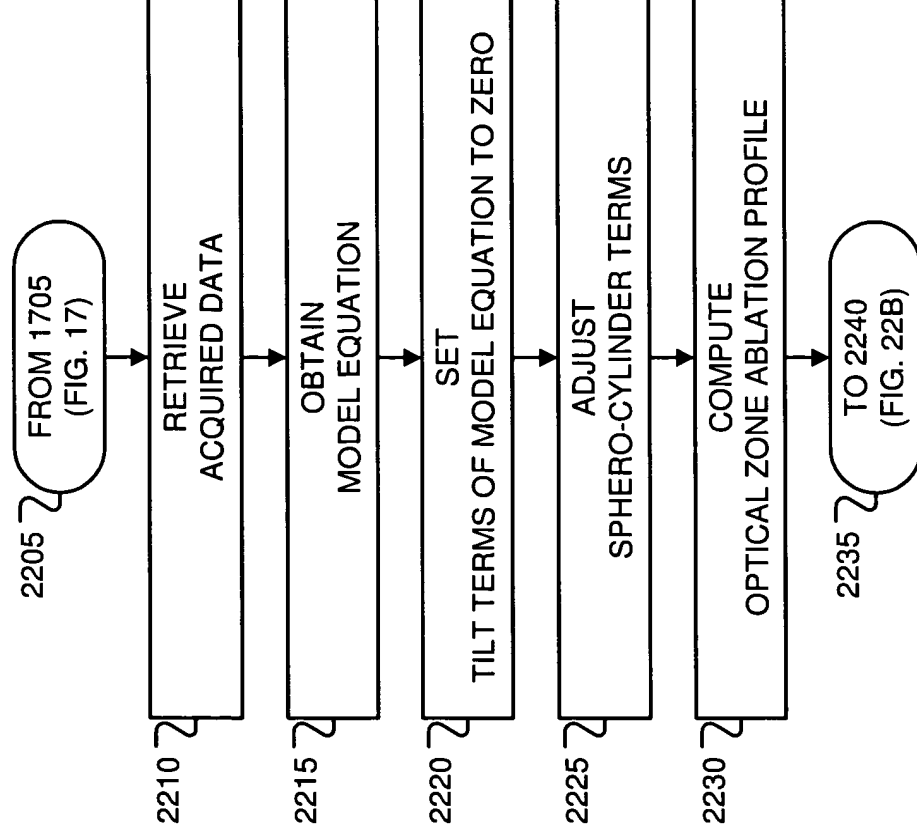


FIG. 22A



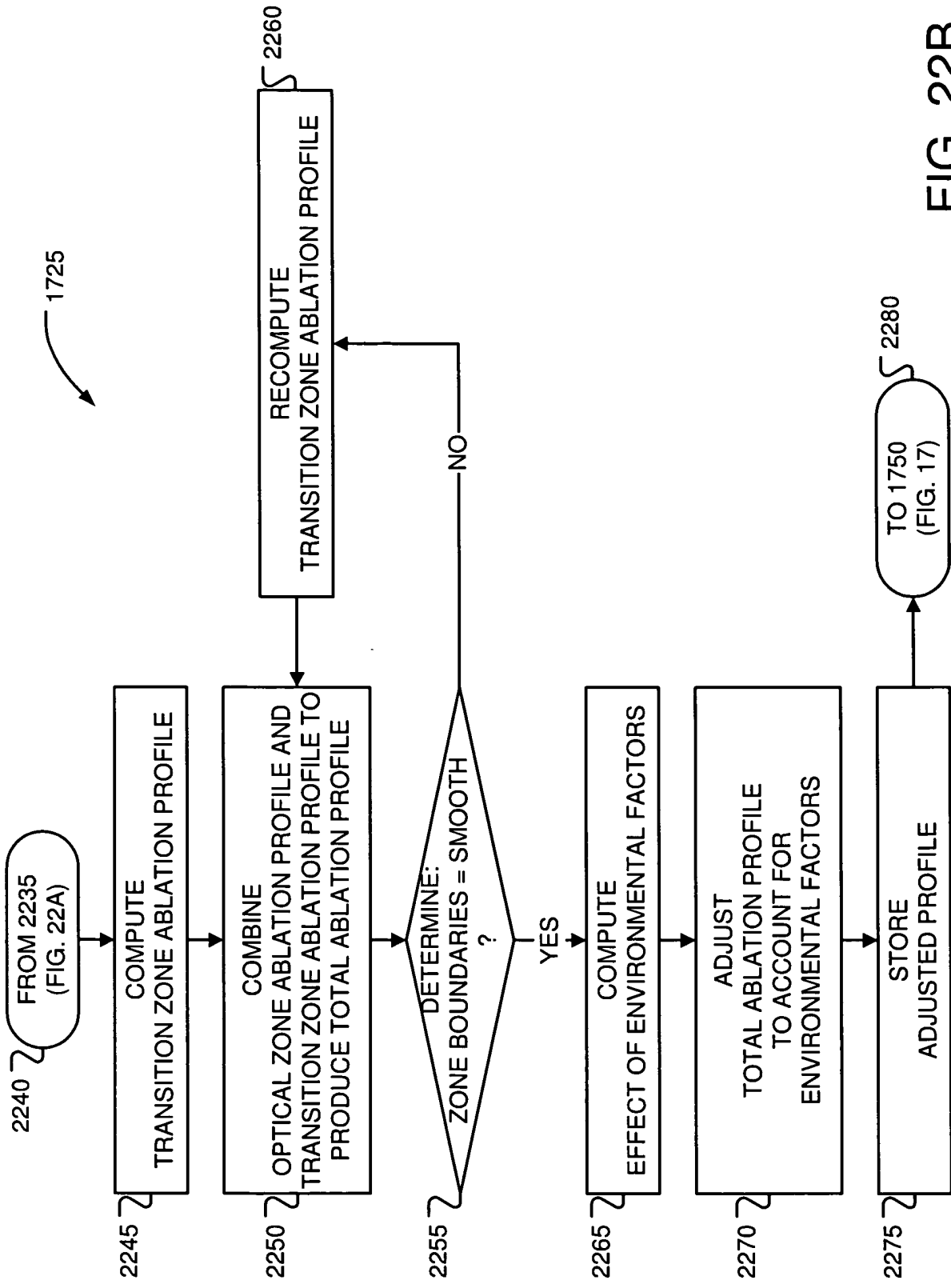


FIG. 22B

1725

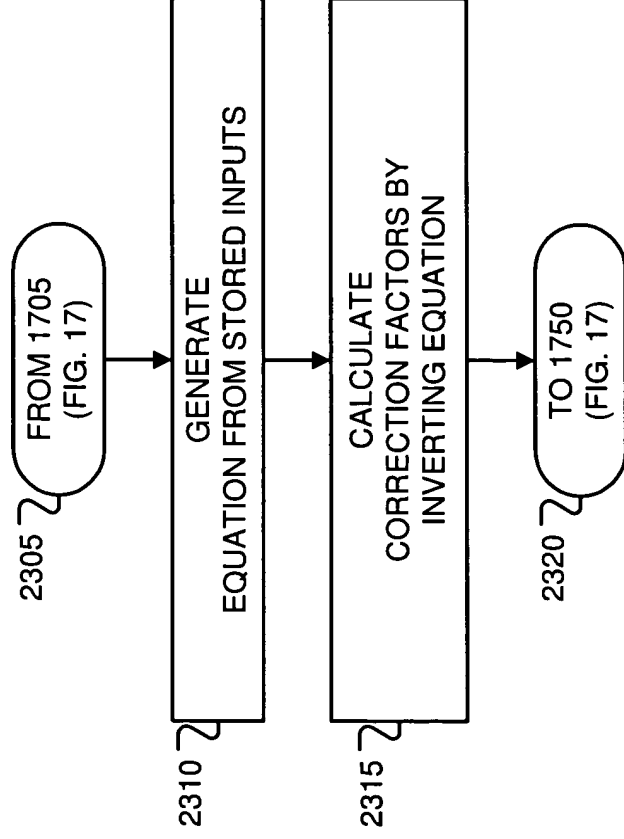
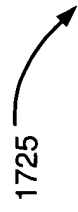
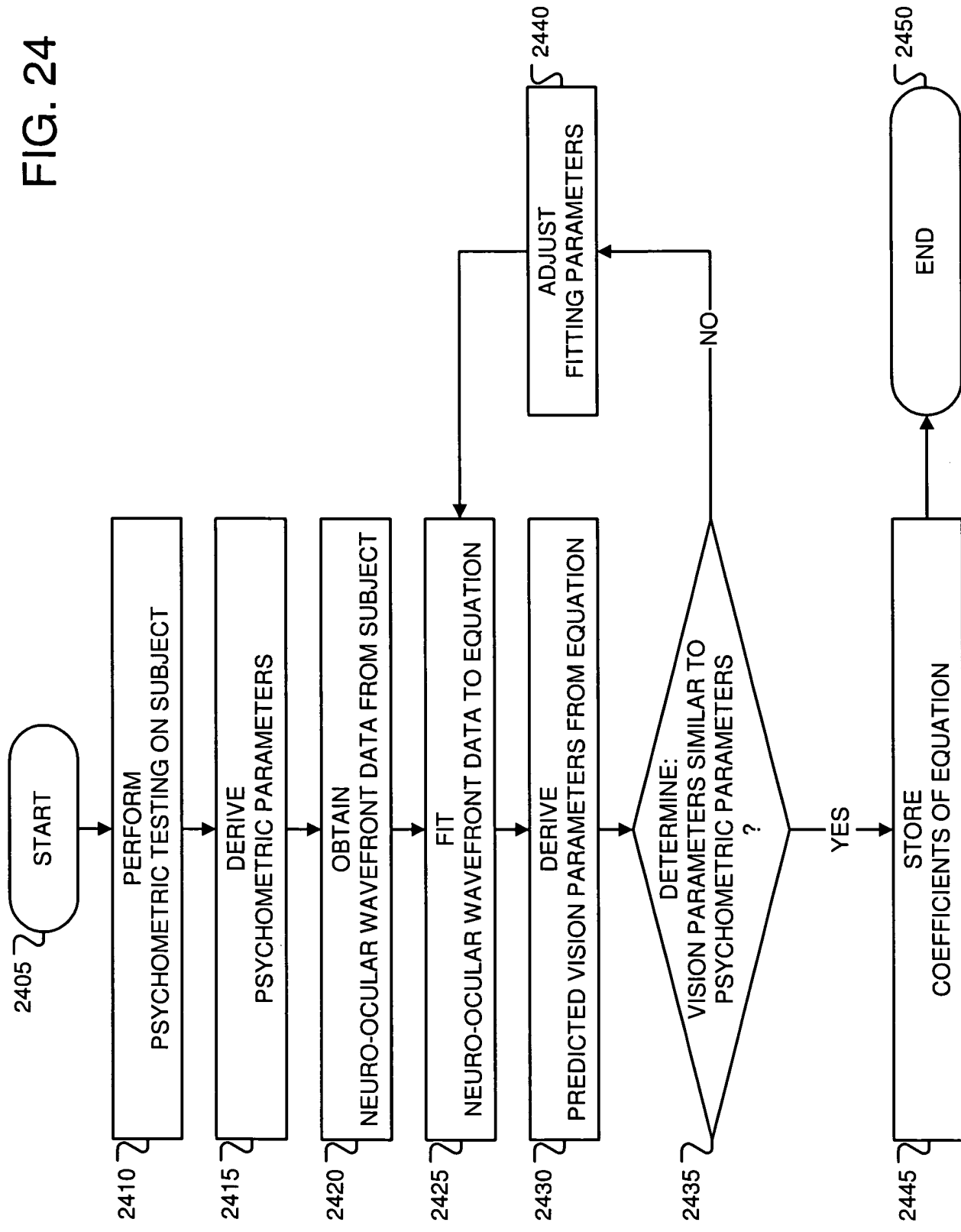


FIG. 23

FIG. 24



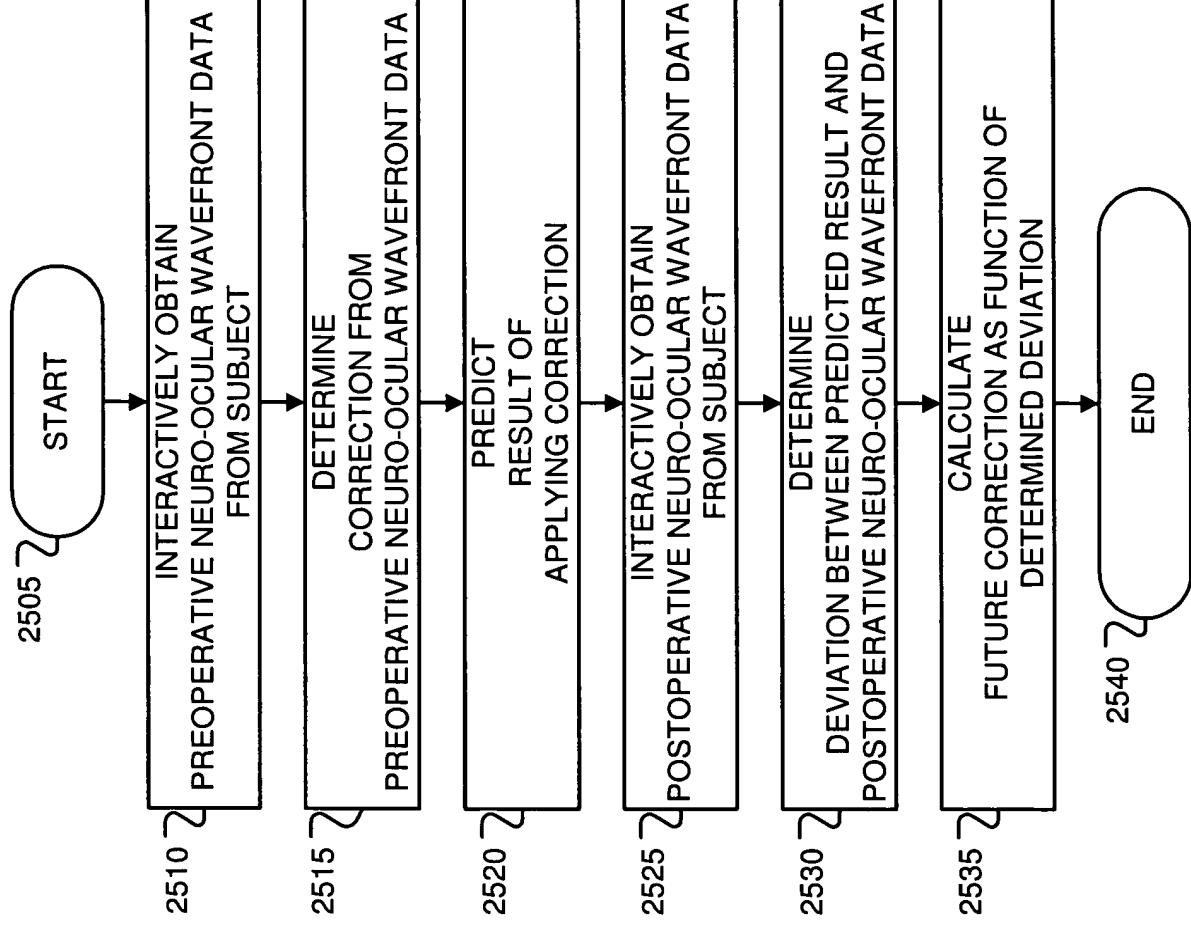


FIG. 25

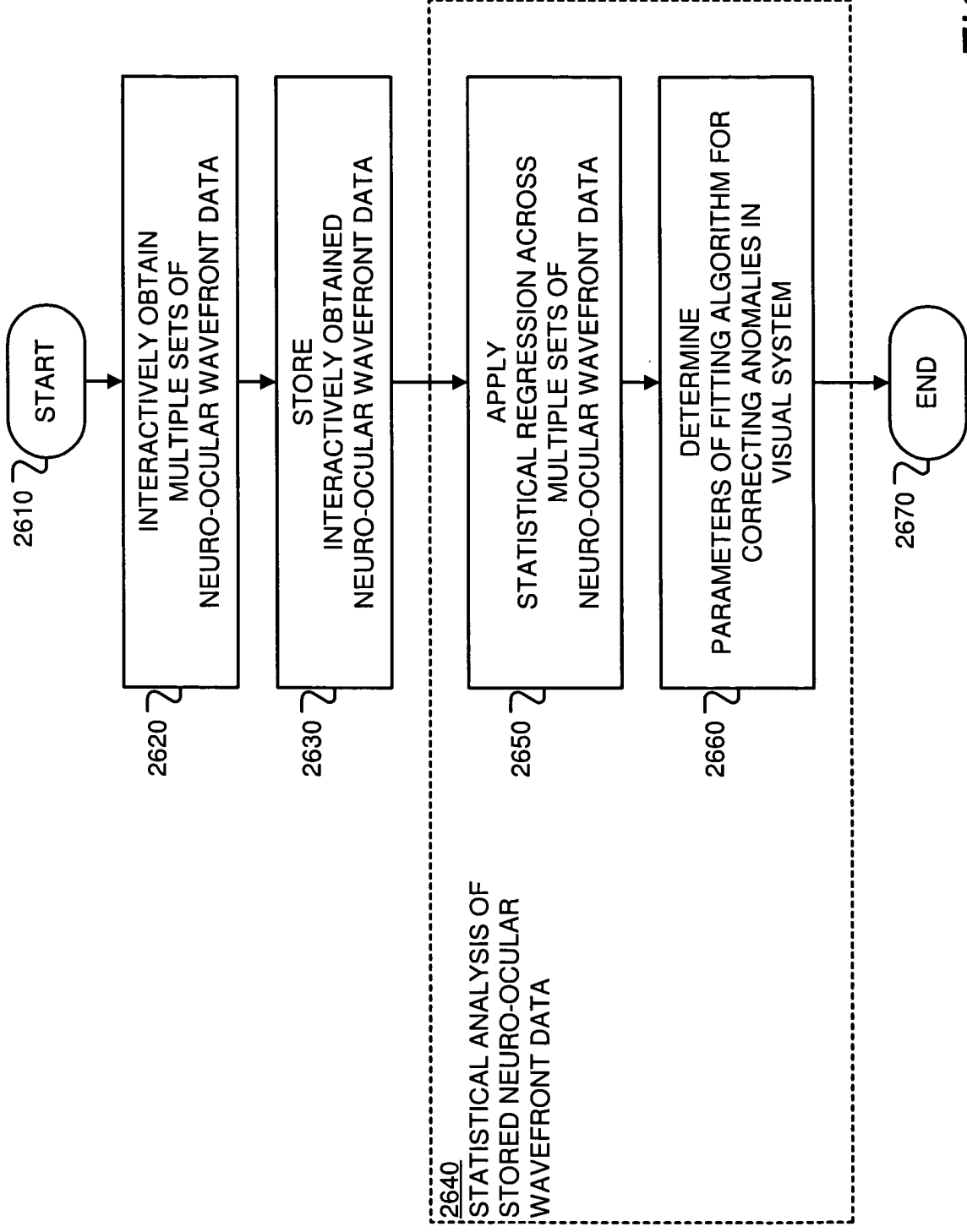


FIG. 26

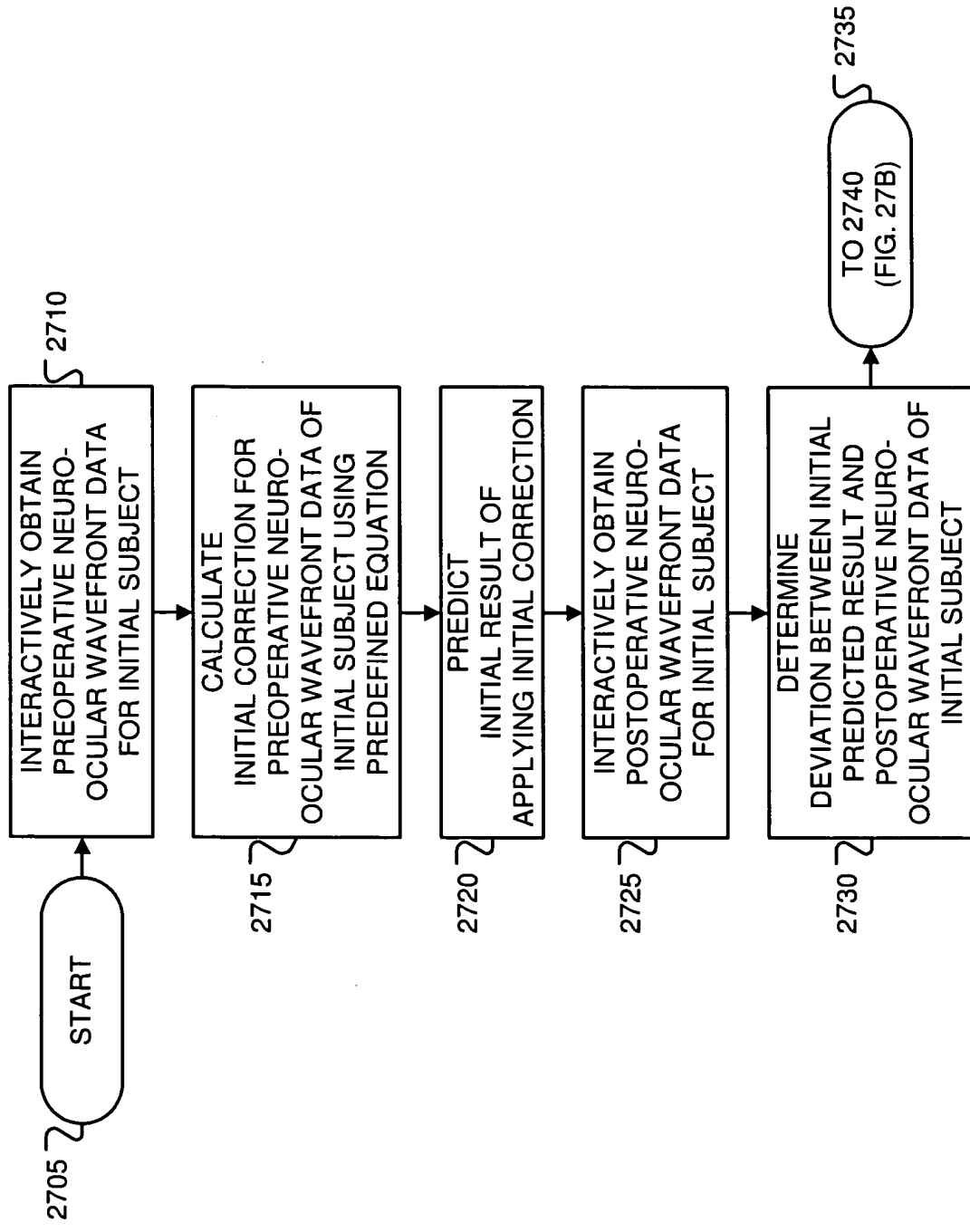
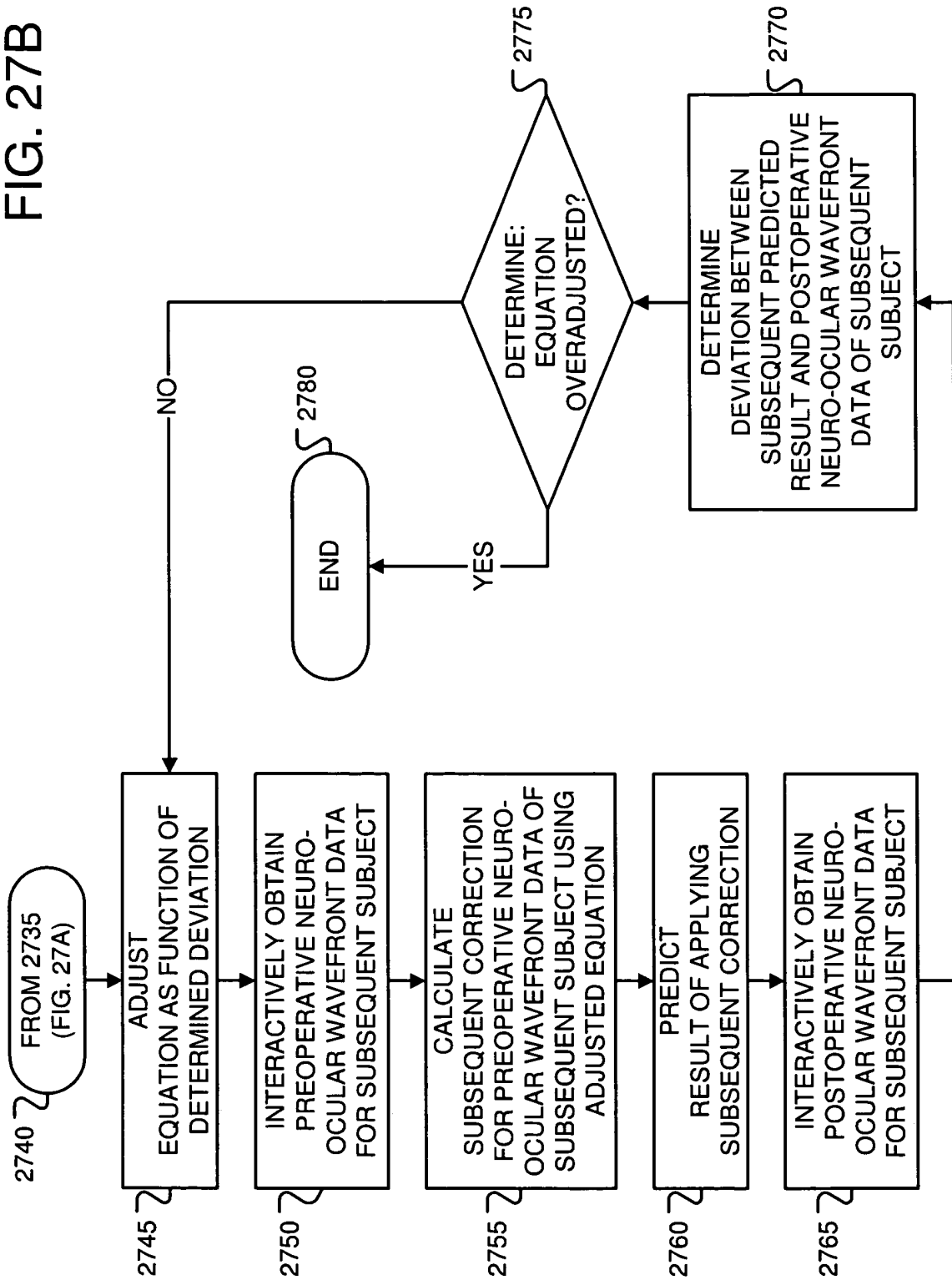


FIG. 27A

FIG. 27B



Column	Variable Name	Definition
1	Point ID	A unique point identifier that describes the location of the point in the pupil sampling map. The point (0,0) is given a Point ID of 0.
2	X coordinate (mm)	Horizontal location in entrance pupil where the acquisition occurred.
3	Y coordinate (mm)	Vertical location in entrance pupil where the acquisition occurred.
4	dx (milliradians)	Horizontal compensation measurement to nullify wavefront error at (x, y).
5	dy (milliradians)	Vertical compensation measurement to nullify wavefront error at (x, y).

FIG. 28



Variables	Definition
$(x, y)$	Coordinate system of wavefront measurement with respect to pupillary centroid. $(0, 0)$ corresponds to centroid of pharmacologically dilated pupil in mesopic illumination conditions.
$(X, Y)$	Coordinate system of ablation profile with respect to corneal vertex. $(0, 0)$ corresponds to corneal vertex.

FIG. 29

Variable Name	Definition
$R_{OZ}$	Radius of optical zone.
$R_{TZ}$	Radius of transition zone.
$W_{min}$	Minimum value of the wavefront error over the optical zone area (the most negative value).
$D_{Mes}$	Diameter of the natural pupil under mesopic illumination conditions.
$D_{Dil}$	Diameter of the pharmacologically dilated pupil under mesopic illumination conditions.
$\eta$	Ablation rate efficacy factor, $\eta = 1.0$ (for corneal tissue), $\eta \approx 0.3$ (for polymethylmethacrylate, PMMA).
$r$	Radius from the pupillary centroid to the point $(X,Y)$ , $r = \sqrt{x^2 + y^2}$ .
$n_c$	Index of refraction of cornea ( $n_c = 1.3771$ ), according to reference 4.

FIG. 30

Emory Vision Term Index	Zemax Term Number	OSA Term Number (Thibos, et. al.)	Zernike Function Term = $F_n(\rho, \theta)$
Unused	1	0	1
1	2	2	$4^{1/2}(\rho) * \cos(\theta)$
2	3	1	$4^{1/2}(\rho) * \sin(\theta)$
3	6	5	$6^{1/2}(\rho^2) * \cos(2\theta)$
4	4	4	$3^{1/2}(2\rho^2 - 1)$
5	5	3	$6^{1/2}(\rho^2) * \sin(2\theta)$
6	10	9	$8^{1/2}(\rho^3) * \cos(3\theta)$
7	8	8	$8^{1/2}(3\rho^3 - 2\rho) * \cos(\theta)$
8	7	7	$8^{1/2}(3\rho^3 - 2\rho) * \sin(\theta)$
9	9	6	$8^{1/2}(\rho^3) * \sin(3\theta)$
10	14	14	$10^{1/2}(\rho^4) * \cos(4\theta)$
11	12	13	$10^{1/2}(4\rho^4 - 3\rho^2) * \cos(2\theta)$
12	11	12	$5^{1/2}(6\rho^4 - 6\rho^2 + 1)$
13	13	11	$10^{1/2}(4\rho^4 - 3\rho^2) * \sin(2\theta)$
14	15	10	$10^{1/2}(\rho^4) * \sin(4\theta)$
15	20	20	$12^{1/2}(\rho^5) * \cos(5\theta)$
16	18	19	$12^{1/2}(5\rho^5 - 4\rho^3) * \cos(3\theta)$
17	16	18	$12^{1/2}(10\rho^5 - 12\rho^3 + 3\rho) * \cos(\theta)$
18	17	17	$12^{1/2}(10\rho^5 - 12\rho^3 + 3\rho) * \sin(\theta)$
19	19	16	$12^{1/2}(5\rho^5 - 4\rho^3) * \sin(3\theta)$
20	21	15	$12^{1/2}(\rho^5) * \sin(5\theta)$
21	28	27	$14^{1/2}(\rho^6) * \cos(6\theta)$
22	26	26	$14^{1/2}(6\rho^6 - 5\rho^4) * \cos(4\theta)$
23	24	25	$14^{1/2}(15\rho^6 - 20\rho^4 + 6\rho^2) * \cos(2\theta)$
24	22	24	$7^{1/2}(20\rho^6 - 30\rho^4 + 12\rho^2 - 1)$
25	23	23	$14^{1/2}(15\rho^6 - 20\rho^4 + 6\rho^2) * \sin(2\theta)$
26	25	22	$14^{1/2}(6\rho^6 - 5\rho^4) * \sin(4\theta)$
27	27	21	$14^{1/2}(\rho^6) * \sin(6\theta)$
28	36	35	$16^{1/2}(\rho^7) * \cos(7\theta)$
29	34	34	$16^{1/2}(7\rho^7 - 6\rho^5) * \cos(5\theta)$
30	32	33	$16^{1/2}(21\rho^7 - 30\rho^5 + 10\rho^3) * \cos(3\theta)$
31	30	32	$16^{1/2}(35\rho^7 - 60\rho^5 + 30\rho^3 - 4\rho) * \cos(\theta)$
32	29	31	$16^{1/2}(35\rho^7 - 60\rho^5 + 30\rho^3 - 4\rho) * \sin(\theta)$
33	31	30	$16^{1/2}(21\rho^7 - 30\rho^5 + 10\rho^3) * \sin(3\theta)$
34	33	29	$16^{1/2}(7\rho^7 - 6\rho^5) * \sin(5\theta)$
35	35	28	$16^{1/2}(\rho^7) * \sin(7\theta)$

FIG. 31